

IN THE CLAIMS

Presented below is a complete listing of all the claims in the format as permitted by the PTO waiver of 37 CFR 1.121 in accordance with the Official Gazette Notice of February 25, 2003.

Please cancel claims 13-14, 17-34, 47-83, 87-88, 97-104, and 106-119 without prejudice.

1. (Currently Amended) An apparatus, comprising:  
a stage having a ~~surface~~ undersurface;  
a first blade coupled to the stage, the first blade extending ~~perpendicular to~~  
perpendicularly from the ~~surface~~ undersurface of the stage;  
a frame having a ~~surface~~ undersurface, the stage pivotally coupled to the frame; and  
a second blade coupled to the frame, the second blade extending ~~perpendicular to~~  
perpendicularly from the ~~surface~~ undersurface of the frame, the second blade being parallel in  
proximity with the first blade.
2. (Currently Amended) The apparatus of claim 1, ~~wherein a gap having a distance is~~  
~~formed between the first blade and the second blade, and wherein the first blade is configured to~~  
~~move relative to the second blade along a rotational range of motion, the distance between the~~  
~~first blade and the second blade is maintained substantially constant throughout the range of~~  
~~motion.~~
3. (Currently Amended) The apparatus of claim 2, ~~wherein the first blade is configured to~~  
~~move relative to the second blade along a range, and wherein a gap between~~ the first blade and  
~~the second blades blade are is~~ maintained substantially constant parallel throughout the rotational  
range of motion.

4. (Currently Amended) The apparatus of claim 1, wherein the first blade has a first length, the second blade has a second length, and wherein the first ~~length~~ blade is tapered.

5. (Currently Amended) The apparatus of claim 1, wherein the first blade has a height extending from the ~~surface~~ undersurface of the ~~movable~~ frame, a length extending from a first side to a second side, and wherein the first side has a first width and the second side has a second width different ~~than~~ from the first width.

6. (Original) The apparatus of claim 3, wherein the first blade is configured to move relative to the second blade in the presence of a potential between the first and second blades.

7. (Currently Amended) The apparatus of claim 36, wherein the first blade has a length and wherein the range of motion of the first blade is determined by the length.

8. (Original) The apparatus of claim 1, wherein the stage is pivotally coupled to the frame with a flexure.

9. (Original) The apparatus of claim 8, wherein the flexure comprises a plurality of torsion beams.

10. (Original) The apparatus of claim 9, wherein the plurality of torsion beams are substantially parallel to one another.

11. (Original) The apparatus of claim 9, wherein each of the plurality of torsion beams has a length and wherein the plurality of torsion beams are non-parallel along portion of the lengths.

12. (Currently Amended) An apparatus, comprising:

    a frame having an undersurface;

    a stage pivotally coupled to the frame, wherein the stage has an undersurface;

    a first blade coupled to the stage, wherein the first blade extends perpendicularly from the undersurface of the stage; and

    a second blade coupled to the frame, wherein the second blade extends perpendicularly from the undersurface of the frame, the second blade configured to move relative to the first blade through a rotational range of motion, the second blade remaining parallel spaced apart from but in proximity with the first blade throughout the rotational range of motion.

13. (Canceled)

14. (Canceled)

15. (Original) The apparatus of claim 12, wherein the first blade has a tapered length.

16. (Previously Amended) The apparatus of claim 91, wherein the flexure comprises a plurality of torsion beams.

Claims 17-34 (Canceled)

35. (Currently Amended) An apparatus, comprising:

    a central stage;

    a movable frame disposed around the central stage;

    a fixed frame disposed around the movable frame;

    a first blade coupled to the central stage, the first blade extending perpendicular

perpendicularly from to the surface an undersurface of the central stage; and  
a second blade coupled to the movable frame perpendicular to the surface, the second  
blade extending perpendicularly from an undersurface of the movable frame, the second blade  
being parallel in proximity with the first blade.

36. (Currently Amended) The apparatus of claim 35, ~~wherein a gap having a distance is formed between the first blade and the second blade, and wherein the first blade is configured to move relative to the second blade along a rotational range of motion, the distance between the first blade and the second blade is maintained substantially constant throughout the range of motion.~~

37. (Currently Amended) The apparatus of claim 35, ~~wherein the first blade is configured to move relative to the second blade along a range and wherein a gap between the first blade and the second blades blade are is maintained substantially constant parallel throughout the a range of motion.~~

38. (Original) The apparatus of claim 36, further comprising a mirror coupled to the central stage.

39. (Currently Amended) The apparatus of claim 35, wherein the central stage is coupled to the movable frame with a first flexure and the movable frame is coupled to the fixed frame with a second flexure, the second flexure being orthogonal to the first flexure.

40. (Original) The apparatus of claim 39, wherein the first flexure comprises a pair of parallel torsion beams.

41. (Original) The apparatus of claim 39, wherein the second flexure comprises a pair of non-parallel torsion beams.

42. (Original) The apparatus of claim 39, wherein the movable frame comprises:  
a main body coupled to the second flexure;  
an end bar coupled to the first flexure; and  
a support member coupled between the main body and the end bar.

43. (Original) The apparatus of claim 42, wherein the support member is coupled to the main body at a non-perpendicular angle.

44. (Currently Amended) An apparatus, comprising:  
a stage having ~~a surface~~ an undersurface;  
a first blade coupled to the stage, the first blade extending ~~perpendicular to~~ perpendicularly from the ~~surface~~ undersurface of the stage;  
a frame having ~~a surface~~ an undersurface, the stage pivotally coupled to the frame with a flexure having a plurality of torsion beams; and  
a second blade coupled to the frame, the second blade extending ~~perpendicular to~~ perpendicularly from the ~~surface~~ undersurface of the frame, the second blade being ~~parallel in proximity with~~ substantially parallel in proximity with the first blade, wherein a gap having a distance is formed between the first and second blades, ~~the distance is maintained between the first and second blades~~ substantially uniform when an electrostatic potential is applied between the first and second blades.

45. (Currently Amended) An apparatus, comprising:  
a plurality of actuators, each of the plurality of actuators comprising:  
a central stage;

a movable frame disposed around the central stage;  
a first blade coupled to the central stage, the first blade extending perpendicular to the perpendicularly from an surface undersurface of the central stage; and  
a second blade coupled to the movable frame, the second blade extending perpendicularly from an undersurface perpendicular to the surface of the movable frame, the second blade being parallel in proximity with the first blade; and  
a fixed frame disposed around each movable frame of the plurality of actuators.

46. (Original) The apparatus of claim 45, wherein the fixed frame comprises a plurality of isolation segments.

Claims 47-83 (Canceled)

84. (Previously Added) The apparatus of claim 1, wherein the first blade is electrically isolated from the second blade.

85. (Previously Added) The apparatus of claim 8, wherein the flexure is configured to rotate about a single axis and substantially restrict rotation about other axes, the single axis residing along a length of the flexure.

86. (Previously Added) The apparatus of claim 1, further comprising:  
a first set of one or more additional blades coupled to the stage, the first set of one or more additional blades electrically connected to each other and to the first blade; and  
a second set of one or more additional blades coupled to the stage, the second set of one or more additional blades electrically connected to each other and to the second blade.

87. (Canceled)

88. (Canceled)

89. (Currently Amended) The apparatus of claim 85, further comprising a third blade coupled to the frame, the third blade extending perpendicularly to perpendicularly from the surface undersurface of the frame, the third blade being parallel in proximity with the first blade.

90. (Previously Added) The apparatus of claim 89, wherein the second blade is configured to rotate the stage in one direction and the third blade is configured to rotate the stage in an opposite direction.

91. (Previously Added) The apparatus of claim 12, wherein the stage is pivotally coupled to the frame with a flexure.

92. (Currently Amended) The apparatus of claim 12, further comprising a third blade coupled to the frame, the third blade extending perpendicularly to perpendicularly from the surface undersurface of the frame, the third blade being parallel in proximity with the first blade.

93. (Previously Added) The apparatus of claim 91, further comprising isolation segments coupled to electrically separate the first, second and third blades.

94. (Currently Amended) The apparatus of claim 91, further comprising a third blade coupled to the frame, the third blade extending perpendicularly to perpendicularly from the surface undersurface of the frame, the third blade being parallel in proximity with the first blade.

95. (Previously Added) The apparatus of claim 94, wherein the second blade is configured to rotate the stage in one direction and the third blade is configured to rotate the stage in an opposite direction.

96. (Previously Added) The apparatus of claim 94, wherein the first blade is configured to pass by the second blade when the flexure is rotated in the one direction and wherein the first blade is configured to pass by the third blade when the flexure is rotated in the opposite direction.

Claims 97-104 (Canceled)

105. (Previously Added) The apparatus of claim 3, wherein each of the first and second blades has a length and a height, and wherein the range of motion is determined by the length and the height of the first and second blades.

Claims 106-119 (Canceled)

120. (New) The apparatus of claim 1, wherein the first blade extends, at rest, substantially perpendicular to an initial lateral direction of motion of the first blade.

121. (New) The apparatus of claim 1, wherein the first blade has a longest dimension extending perpendicularly from the undersurface of the stage.

122. (New) The apparatus of claim 35, further comprising:  
a first flexure coupling the control stage to the movable frame;  
a second flexure coupling the fixed frame to the movable frame;

a third blade coupled to movable frame, the third blade extending perpendicularly from the undersurface of the movable frame;

a fourth blade coupled to the fixed frame, the fourth blade extending perpendicularly from an undersurface of the fixed frame, wherein the fourth blade is in proximity with the third blade.

123. (New) The apparatus of claim 122, wherein the movable frame has a top surface and wherein the apparatus further comprises an electrical trace coupled to the third blade, wherein the electrical trace resides on the top surface of the movable frame and on the second flexure.

124. (New) The apparatus of claim 122, wherein an electrical potential between the first and second blades results in motion between the stage and the movable frame, which comprises a first degree of freedom, wherein an electrical potential between the third and fourth blades results in motion between the movable frame and the fixed frame, which comprises a second degree of freedom.